


Notice of Allowability	Application No.	Applicant(s)	
	09/914,631	KAN, KOJI	
	Examiner	Art Unit	
	Tiffany A Feltzner	2859	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 06/27/2003.
2. ☒ The allowed claim(s) is/are 4-7 and 16-27.
3. ☒ The drawings filed on 01/23/2003 Fig 1 & 08/30/2001 Fig 2-16 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input checked="" type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date <u>06/23/2004</u> . |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

2. Authorization for this examiner's amendment was given in a telephone interview with **Jay L. Chaskin** Reg. No. 24,030 on June 22nd 2004

3. The application has been amended as follows:

In the **June 27th 2003**, Amendment:

A) Replace (amended claim 22) with the following **Examiner amended claim 22**:

Claim 22 ---A magnetic resonance imaging system comprising:

a magnet system having a space for positioning a subject therein;

means for acquiring a magnetic resonance signal;

means for providing a free flow of air into the space containing the positioned subject, the means being made from a non-magnetic or non metallic material that avoids interference with the magnet system or the means for acquiring a magnetic resonance signal, the means for providing a free flow of air being disposed externally of the magnet system and applied externally to the subject; and

means for adjusting the position of the subject in the magnet system.---

B) Replace (New claim 27) with the following **Examiner amended claim 27**:

Claim 27 --- A magnetic resonance imaging system comprising:

a magnet system having a space for positioning a subject therein;
means for acquiring a magnetic resonance signal;
means for providing a free flow of circulating air into the space containing the positioned subject, the means being made from a non-magnetic or non metallic material that avoids interference with the magnet system or the means for acquiring a magnetic resonance signal, the means for providing free circulating air flow being disposed externally to, and over the surface of, the subject at a temperature to cool the subject; and
means for adjusting the position of the subject in the magnet system. ---

4. **Replace the abstract filed August 30th 2001** with the following:

ABSTRACT --- An air feed device comprises a fluid motor to drive rotating vanes and blow air with high efficiency into a space accommodating a subject in a magnetic resonance device. The air feed device does not cause electrical interference with the magnetic imaging device. ---

Examiner's Comment

Drawings

5. The **Formal drawing corrections to figure 1** submitted January 23rd 2004, have been approved by the examiner and the official draftsman. The official draftsman has also accepted **originally filed drawings 2-16** submitted August 30th 2001 as Formal drawings. Therefore, the examiner considers the Formal drawing requirement to have already been satisfied by applicant. [See attached PTO 948 Form].

Status of claims

6. **Claims 1-3 and 8-15 are canceled** as per applicant's January 30th 2003 amendment.

Response to Arguments

7. Applicant's arguments, see pages 2-4 of the amendment and response filed June 27th 2003, with respect to the amendments of the June 27th 2003 response, the amendments to claim 22 and new claim 27 are considered to be free of new matter, and support applicant's arguments on pages 2-4 of the amendment and response filed June 27th 2003. The arguments, in view of applicant's amendments have been fully considered and are persuasive. Therefore, The rejections of claim 22 from the previous April 14th 2003 Office action, have been withdrawn.

8. The following is an examiner's Statement of **Reasons for Allowance**

A) Previously Amended Claim 4, "A magnetic resonance imaging device comprising: means for signal acquisition that acquires a magnetic resonance signal; a space accommodating a subject for imaging; a fluid motor rotating by fluid flow and disposed adjacent to the space; and rotating vanes driven by the fluid motor that forces air into the space, wherein the fluid motor and the rotating vanes do not cause electrical interference with the device", is considered to **be allowable over the prior art of record** because the **prior art of record** does not teach or suggest the novel and nonobvious combination of a magnetic resonance imaging device comprising: "a fluid motor rotating by fluid flow and disposed adjacent to the space;" which accommodates a subject for imaging, and "rotating vanes driven by the fluid motor that forces air into the space, wherein the fluid motor and the rotating vanes do not cause electrical interference with the" magnetic resonance "device"", in combination with each of the other features of this claim. . It is the entire combination of structural features, taken as a whole, that is the novelty of previously amended independent claim 4, from the June 27th 2003 amendment, and it the combination of limitations taken as a whole that distinguishes applicant's application from the prior art.

B) Claims 5-7 and 16-21 of the June 27th 2003 amendment response are considered to be allowable over the prior art of record because they depend from **allowable amended claim 4**. Therefore, the same reasons for allowance that apply to

allowable amended claim 4 apply to **dependent claims 2-12** and need not be reiterated.

C) With respect to **Examiner Amended claim 22**, “A magnetic resonance imaging system comprising:

a magnet system having a space for positioning a subject therein;

means for acquiring a magnetic resonance signal;

means for providing a free flow of air into the space containing the positioned subject, the means being made from a non-magnetic or non metallic material that avoids interference with the magnet system or the means for acquiring a magnetic resonance signal, the means for providing a free flow of air [flow] being disposed externally of the magnet system and applied externally to the subject; and means for adjusting the position of the subject in the magnet system”.

D) This **examiner amended independent claim** is considered to **be allowable over the prior art of record** because the **prior art of record** does not teach or suggest the novel and nonobvious combination of a magnetic resonance imaging device comprising: a “means for providing a free flow of air into the space containing the positioned subject, the means being made from a non-magnetic or non metallic material that avoids interference with the magnet system or the means for acquiring a magnetic resonance signal, the means for providing a free flow of air [flow] being disposed externally of the magnet system and applied externally to the subject;” in combination with each of the other features of this claim. It is the entire combination of structural features, taken as a whole, that is the novelty of **examiner amended independent claim 22**, and it is the combination of limitations taken as a whole that distinguishes applicant’s application from the prior art.

E) **Claims 23-26** of the **June 27th 2003 amendment response** are considered to be allowable over the prior art of record because they depend from **allowable Examiner amended claim 22**. Therefore, the same reasons for allowance that apply to **allowable Examiner amended claim 22** apply to **dependent claims 23-26** and need not be reiterated.

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F) With respect to **Examiner Amended claim 27**, “A magnetic resonance imaging system comprising:

a magnet system having a space for positioning a subject therein;

means for acquiring a magnetic resonance signal;

means for providing a free flow of circulating air into the space containing the positioned subject, the means being made from a non-magnetic or non metallic material that avoids interference with the magnet system or the means for acquiring a magnetic resonance signal, the means for providing free circulating air flow being disposed externally to, and over the surface of, the subject at a temperature to cool the subject; and

means for adjusting the position of the subject in the magnet system.”

G) This **examiner amended independent claim** is considered to **be allowable over the prior art of record** because the **prior art of record** does not teach or suggest the novel and nonobvious combination of a magnetic resonance imaging device comprising: a “means for providing a free flow of circulating air into the space containing the positioned subject, the means being made from a non-magnetic or non metallic material that avoids interference with the magnet system or the means for acquiring a magnetic resonance signal, the means for providing free circulating air flow being disposed externally to and over the surface of the subject at a temperature to cool the subject; in combination with each of the other features of this claim. It is the entire combination of structural features, taken as a whole, that is the novelty of **examiner amended independent claim 27**, and it is the combination of limitations taken as a whole that distinguishes applicant’s application from the prior art.

H) In the magnetic resonance systems of the prior art, which provide oxygen to a patient undergoing an MRI scan, such as the MRI compatible Ventilator’s of **Foster et al.**, the means for providing air to the patient is plastic tubing, which constricts or controls the flow or air to the patient/subject through the plastic tubing, to supply the oxygenated air internally to the patient/subject. This is contrary to applicant’s means for providing air which provides a “free flow of air (i.e. **examiner amended claim 22**) / a free flow of circulating air (i.e. **examiner amended claim 27**) into the space containing

the positioned patient/subject; or the providing of a fluid motor with rotating vanes which forces air into the space accommodating the patient/subject without causing electrical interference (i.e. **claim 4**), or interference with the magnet, or MRI signal acquisition means (i.e. **examiner amended claims 22 and 27**) .

I) The prior art does not even consider a fluid motor as set forth or other means to provide a free flow of air to the patient, because the prior art horizontal, vertical, and open MRI systems make the assumption that the atmosphere itself provides a subject's respiratory needs. Applicant's system however recognizes that normal atmosphere may not be satisfactory in all magnetic resonance imaging situations and that allowing a patient to feel a breeze of flowing air, where the means for providing forced, free flowing, and circulating air to the space accommodating/containing the patient does not interfere with the electrical, or magnetic components of the MRI imaging system, is beneficially assistive in calming a claustrophobic patient by providing the "breeze" like sensation of being outdoors; and in cooling a patient/subject when necessary. None of the prior arts teach providing a "breeze" like flow of air that is external to the magnet system, the signal acquisition components, and the patient/subject by means of a component which avoids interference with the electrical and magnetic components of the MRI system, as taught and claimed by applicant. It is the combination of all of these features that makes the applicant's allowed amended claims as recited above allowable over the prior art of record.

9. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Prior Art of Record

20. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

A) **Hair, Jr. et al.**, US patent 3,983,715 which shows a hydraulic fluid motor being used to operate a fan and compressor to a compartment housing a subject.

- B) Dietz** US patent 5,484,850 an air providing means used with a magnetic resonance imaging device.
- C) Goscenski, Jr.** US patent 4,179,888 which provides a hydraulic fluid motor to rotate a fan, without the fluid flow being affected.
- D) Lemelson** US patent 5,946,220 which shows a fan used to cool a computer processing device.
- E) Kubokawa et al.,** US patent 5,035,231 which shows another version of an endoscopic device used in conjunction with MRI to both image and provides air to a patient, while the device is inside the patient.
- F) McCarthy et al.,** US patent 5,602,477 issued February 1997, which teaches an MRI device for freezing food, and .
- G) Kubokawa et al.,** US patent 4,960,106 issued October 1990, which teaches providing an MRI compatible device which provides air internally to the subject, as opposed to externally.
- H) Foster et al.,** US patent 5,335,561 issued August 9th 1994 which teaches a ventilator and care cart each capable of nesting within and docking with a Hospital bed base.
- I) Foster et al.,** US patent 5,337,843 issued August 16th 1994 which teaches a ventilator and care cart each capable of nesting within and docking with a Hospital bed base.
- J) Foster et al.,** US patent 5,457,831 issued October 17th 1995 which teaches a ventilator care cart and motorized transport each capable of nesting within and docking with a Hospital bed base.
- K) Foster et al.,** US patent 5,497,766 issued March 12th 1996 which teaches a ventilator and care cart each capable of nesting within and docking with a Hospital bed base.
- L) Kan** US Patent Application Publication 2002/0135370 A1 published September 26th 2002 which is the corresponding publication of applicant's instant application as originally filed, which is noted solely for the purposes of a complete record, This reference is not available as prior art against the claims of the instant application.

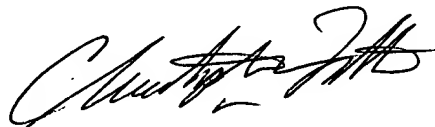
Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tiffany Fetzner whose telephone number is: (571) 272-2241. The examiner can normally be reached on Monday-Thursday from 7:00am to 4:30pm., and on alternate Friday's from 7:00am to 3:30pm.

11. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego Gutierrez, can be reached at (571) 272-2245. The **only official fax phone number** for the organization where this application or proceeding is assigned is **(703) 872-9306**.



TAF
June 23, 2004



Diego Gutierrez
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CHRISTOPHER W. FULTON
PRIMARY EXAMINER